

**GOAL:** Create a three-dimensional looking drawing of your team's apartment.

Architects use isometric paper. An isometric drawing is a view seen from above that represents the three dimensions of the space.

- Get one centimeter cube
- Place the cube on the table so that one of the edges is facing toward you (not one of the sides).
- Place a dot on your isometric paper to represent the one vertex pointing out toward you.
- From this vertex, draw the three edges that shoot out from it. One goes straight down, one goes up to the left, and one goes up to the right.
- Draw the final two lines to create the left face, then the right face and top face.
- With the light in the room, the sides all look like slightly different colors. Leave one of your sides blank, lightly shade in one side, and shade in one side dark. This makes the cube look three dimensional.
- Complete the same task with 3 cubes. Add one cube on top of the original and one cube in front of the right face (pointing toward you). Make a brand new drawing of the new shape.
- Optional: Create a third drawing using either 4 or 5 cubes.

Now you are ready to draw your 3-D house isometrically.

- Use a ruler for this drawing.
- Every two squares on your actual house will equal one square on your isometric drawing. So if your house is 24 lines long, it will be drawn as 12 lines long on the isometric paper. If an item is an odd number, use your best judgment as to whether rounding up or down looks better.
- Draw all four windows and the door.
- Shade the house appropriately.
- If time allows, you may wish to try drawing some items around your home as well (walkway, pool, etc.)

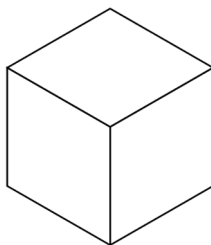
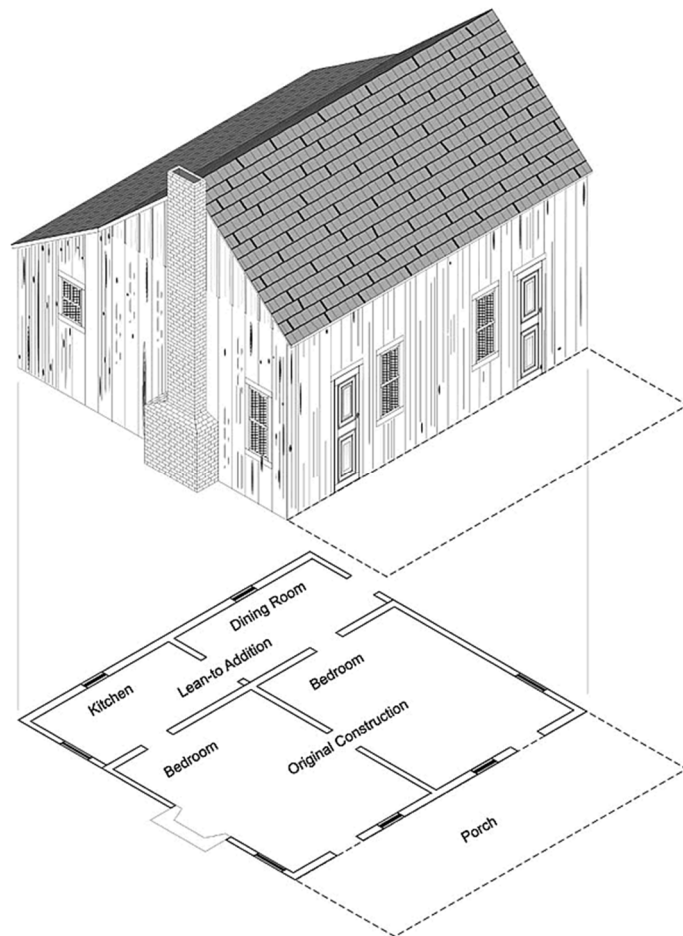
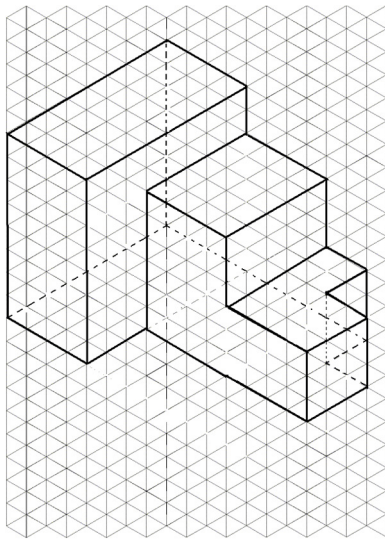
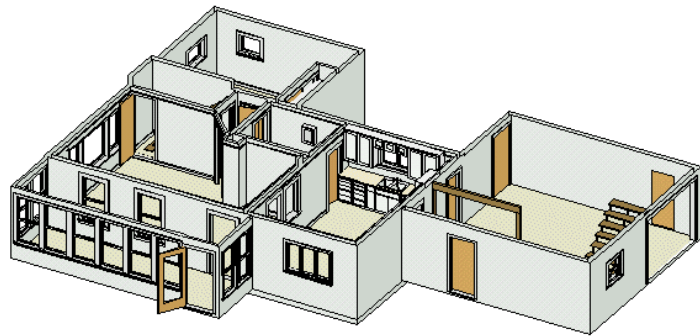
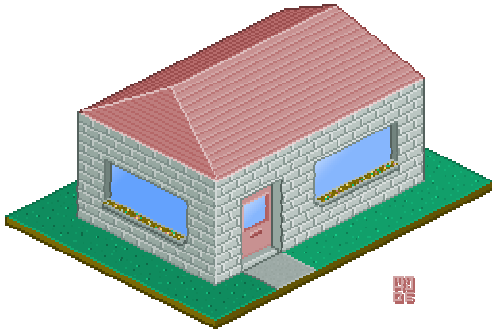
### **Your homework for Architecture Day 5:**

- Choose one of the following:
  - **Create an isometric drawing on your 3 initials or a word at least 3 letters long approved by your teacher**
  - **Isometric drawing not your thing? Instead you can create elevation drawings of one of your tennis shoes OR you can create a cross-section of your favorite sandwich**

Isometric Drawing - Use "rails" (ask your teacher) to help orient the letters correctly on your paper. Remember that you will need to create block-type letters for it to work and that you need to shade.

Do you want to draw isometrically on your computer? <http://illuminations.nctm.org/ActivitySearch.aspx>  
In the Advanced Options box type "isometric". Then choose the Isometric Drawing Tool.

Do you want to print out some isometric paper? <http://www.waterproof-paper.com/graph-paper/>

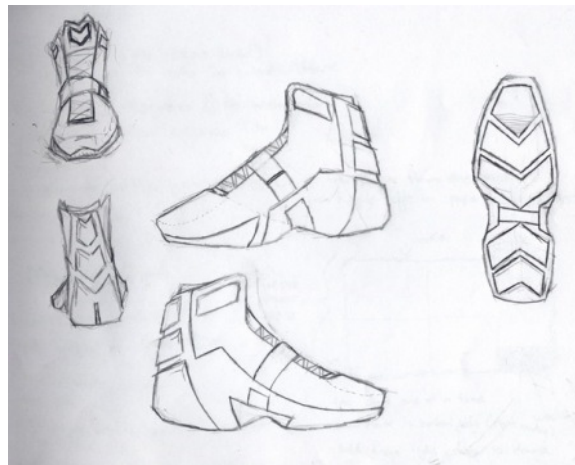


**Sketching Top View and Elevation Drawings of Simple Objects**

1. Take off one of your shoes and place it on the table.
2. Sketch a top view drawing (or “roof plan”) of your shoe in the middle of your first piece of computer paper. Make your drawing large enough to fill up as much of the page as you can.
3. With light lines, transfer the length of the shoe straight down onto your second sheet of paper. On this side elevation, add a heavy ground plane line near the bottom of the paper. Continue drawing the side of the object.
4. With light lines, transfer the width of your shoe straight across to the right to create a front elevation. Turn the paper 90 degrees and add a ground plane under the object. Continue drawing the front elevation of the object.

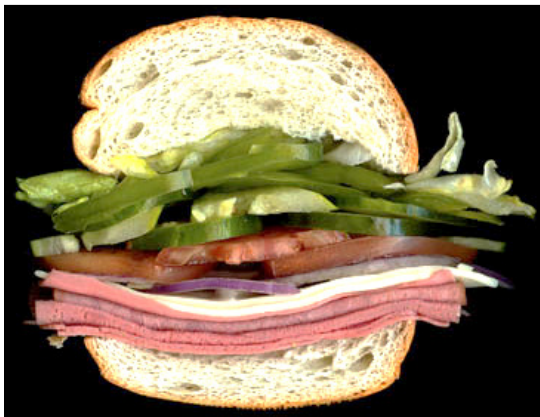
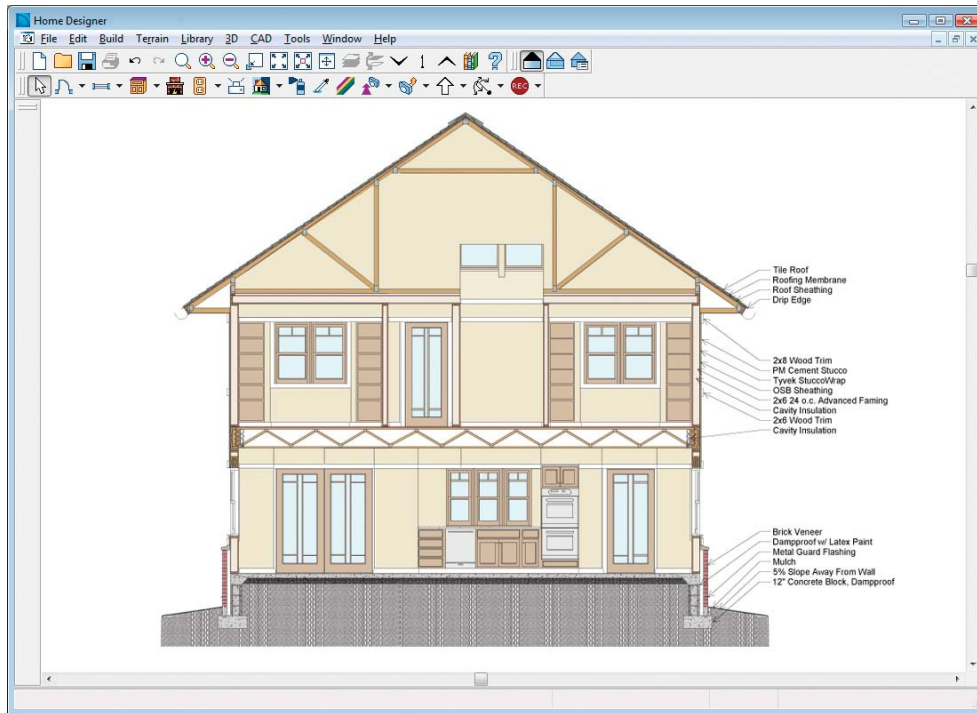


Step 3



### Sketching a Cross-Section of Simple Objects

A section drawing for a building allows us to see what materials area used between the walls or under the floor. Likewise, a section drawing of a sandwich reveals what is between two pieces of bread.



Draw a scaled section (cross-section) drawing of your ideal sandwich. Draw it at full scale (1 in = 1 in). Using leader lines and arrows to label all of the items in the sandwich, hamburger, sub, etc.

Your sandwich must have some sort of bread and at least 4 ingredients between the top and bottom piece of bread.